LESSONS IN DIETETICS

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ALCOHOL

THE only form of alcohol with which we are concerned is Ethyl Alcohol (C_2H_5OH). It is produced in all the beverages in which it is found, from the fermentation of sugar by yeast. $C_6H_{12}O_6$ plus yeast and proper temperature equal $2CO_2$ plus $2C_2H_5OH$ and bye-products.

NAME	PERCENTAGE OF ALCOHOL PRESENT	DOSE
Absolute Alcohol	99	Only used externally
Alcohol	91	½–2 drachms
Dilute Alcohol	41	1–4 drachms
Spiritus Frumenti	45–50	1–4 drachms
Spiritus Vini Gallici	45–50	1–4 drachms
Spiritus Juniperi	45–50	1–4 drachms
Vinum Xericum	15–20	4–8 drachms
Vinum Portense	15–20	4–8 drachms
Vinum Album	10–14	4–8 drachms
Vinum Rubrum	10–14	4–8 drachms
Champagne	10–13	8–16 drachms
Claret	8–10	8–16 drachms
Ale, beer, porter	3–6	

Externally alcohol is used as a stimulating and cooling lotion and as an antiseptic. Rubbed into the skin it prevents bedsores by hardening the epidermis.

Internally, the local effects of alcohol are those of a chemical irritant. If some strong form of the spirit (whiskey or brandy) is taken into the mouth a sensation of burning is produced owing to the irritation of the nerve endings and bye-and-bye the mucous membrane becomes somewhat corrugated and whitened by reason of the removal of water from its surface cells and the coagulation of their protoplasm. Repeated local application of this sort is the exciting cause of pharyngitis and gastric catarrh often observed in those who are in the habit of drinking strong spirits, especially on an empty stomach when the alcohol can

come in direct contact with the mucous membrane. The stimulation of the nerves of the mouth brings about, reflexly, a profuse flow of saliva.

Effects of Alcohol on Digestion.—Arrived in the stomach, alcohol mixes with the gastric contents and affects the process of digestion in several directions. It has very little influence on the chemical process of digestion. When it is present to the extent of only 1 to 2 per cent. of the digesting mixture, it is rather favorable than otherwise. If the proportion of alcohol is increased to 5 to 10 per cent. the chemical changes of digestion become retarded and it is only when 20 per cent. of alcohol is present that the process is arrested altogether.

The pancreatic digestion is much more sensitive to alcohol. If the latter is present to the extent of merely 2 to 3 per cent. the process is distinctly retarded. But digestion is not merely a mechanical process and the use of alcohol increases the stomach peristalsis, aiding thus in the mechanical action. It also promotes the secretion of the gastric juice both by irritating the nerves of the mucous membrane and also by its presence in the blood after absorption. The passage of alcohol out of the stomach into the blood is counterbalanced by a flow of water from the blood into the stomach. If then, alcohol be administered to a patient with a dilated stomach, the result may be that the total amount of fluid in the organ is increased. Given with narcotics, it hastens the action of the same, as it becomes more rapidly absorbed.

Alcohol as a Stimulant.—The Latin word "stimulus," means a whip or spur and a stimulant is anything which is capable of spurring on an organ to the performance of more work. As a rule, it may be said, that stimulants act either upon the nervous system or upon the heart and alcohol is one which affects the latter much more than the former. Any symptoms of increased brain activity which it induces are probably to be regarded as the consequence of an increased flow of blood through the brain rather than as a result of any direct action upon the cerebral cells. On account of an increased flow of blood throughout the body, alcohol should never be given as a stimulant when there is any hemorrhage. Its use increases the sweat and urine and it is burnt up or oxidized in the body, thus acting as an auxiliary food.

Elimination of Alcohol.—Alcohol is eliminated from the body by the lungs, skin, bowels and kidneys.

Some Indicated Uses of Alcohol.—In febrile diseases, the signs of its doing good are: it lowers the temperature, strengthens and slows the pulse and respiration, moistens the tongue, lessens the delirium, induces sleep and makes the skin feel moist and more natural.

Some Points to be Considered in its Use.—The question comes, why are tea, coffee and alcoholic beverages necessary to man and not to other animals? The human animal has come to live in very changed conditions. There is less muscular activity because of more sedentary lines of work; there is more nervous strain; man is subject to emotional states not seen in other animals or savages. If any person desires the use of alcohol as a stimulant it is necessary for each one to be his own judge in the matter. There are several points to be considered in its moderate use:

1. In small quantities it may be oxidized and be beneficial, but it is usually a stimulant.

2. It is injurious or beneficial according to conditions, *i.e.*, nature of the person, the amount of food required and individual constitution.

3. The limit of possible beneficial effect is soon reached. The limit is variable with different individuals and it is not necessarily harmless after the limit is reached.

4. Excessive use induces diseases, of many organs, how we do not know.

5. No individual can absolutely distinguish between the good effects and excessive amounts.

6. Danger of developing its excessive use is great. All stimulants have the tendency to increase in amount as used. Protoplasm adapts itself when gradually imposed upon.

7. It may be harmless under certain conditions. There are no statistics that it is useful to healthy conditions.

8. Many of the stimulants used are not pure. Different substances contained in them may be more harmful than the alcohol itself.

Nos. 4, 5 and 6 are the strongest points against the excessive use of alcohol.

(*To be continued*)